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the solar rotation, and a reverse current in the higher latitudes north and south, between 15° and 40°, causing the spots of those latitudes to apparently regress. It now appears at once, when the disclosure of my former map, in the November *Monthly Notice*, is remembered, how former observers may well have disagreed in their concluded periods, from having observed at different epochs when the limiting parallels were different in each case, and when the considerations of latitude and drift were omitted. It further results from the above table that between the parallels of 15° N. and S., the mean drift in latitude is towards the equator, and beyond 15° of latitude or thereabouts towards the poles in each hemisphere, and that the differences of drift in longitude are far larger than those in latitude. The effect of the mean drift in longitude is such that had I inferred a mean period of sidereal rotation from the observations of 1854 and 1855, there would have resulted $25^{d}{\cdot}11 \pm$, and from the subsequent period after the change of distribution exhibited in my map, a period of $25^{d}{\cdot}90 \pm$. A question may hence arise whether at the epoch of that striking change of distribution in latitude, a simultaneous change of currents did not set in, but our records are not yet sufficient to supply materials for the discussion of such speculations.

In Dr. Peters's Tables, A and B, there are materials for a similar investigation. We are at variance in at least one point, namely, that he finds the movement in latitude invariably towards the equator; and I am uncertain whether his general result for longitude is in accordance with my own or not, as I cannot make sure from his words in which direction he counted his meridians. I may have occasion to return to the subject when I have had time to correspond with him on this and some other points; and in the meantime may be permitted to call the reader's attention to a certain similarity of this distribution of currents with the diagram of the winds of our globe given in Plate III. of Lieutenant Maury's Sailing Directions.

1858, *December* 27.

Results of the Observations of Small Planets, made at the Royal Observatory, Greenwich, in the month of December, 1858.

(*Communicated by the Astronomer Royal.*)

Thetis.

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	h m s	h m s	° ′ ″
1858, Dec. 29	12 3 3·3	6 35 38·24	70 45 26·20

Urania.

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	h m s	h m s	° ′ ″
1858, Dec. 20	6 51 32·2	0 47 46·99	81 52 47·79

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Leucothea.

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	h m s	h m s	° ′ ″
1858, Dec. 2	11 25 7·4	4 11 9·10	57 38 14·09

Lætitia.

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	h m s	h m s	° ′ ″
1858, Dec. 2	7 7 19·3	23 52 38·58	99 39 22·16

Ariadne.

Mean Solar Time of Observation.		Apparent R.A.	Apparent N.P.D.
	h m s	h m s	° ′ ″
1858, Dec. 2	10 14 13·2	3 0 3·23	70 13 39·21

Note.—The above observations of *Thetis* and *Leucothea* are published on account of their near agreement with the Ephemerides of Schönfield and Schubert respectively, but from the continued unfavourable state of the sky, no other observations could be secured at Greenwich to compare with them.

Extract of a Letter from Prof. R. Wolf, of Zurich, to Mr. Carrington, dated Jan. 12, 1859.

(*Translation.*)

"In my eighth communication on the subject of the solar spots now ready for the press, I intend partly to give in detail my observations during the year 1858, and partly to continue the researches commenced in the seventh number. I shall accordingly show, by employing, on the one hand, my own observations in the year 1849 to 1858; and on the other, extracts from the observations of Schwabe in the years 1826 to 1848, that the formula

$$M = 50{\cdot}31 + 3{\cdot}73 \left\{ \begin{array}{l} 1{\cdot}68 \sin 585^\circ{\cdot}26\, t + 1{\cdot}00 \sin 360^\circ\, t + \\ 12{\cdot}53 \sin 30^\circ{\cdot}35\, t + 1{\cdot}12 \sin 12^\circ{\cdot}22\, t \end{array} \right\}$$

in which t denotes the number of years elapsed since a period of mean spot-frequency, gives a curve very similar to the sun-spot-curve; and therefore is very fit to be taken as the foundation of the more detailed research which I have now in hand. Now, as the coefficients of the four sines are the values which the fraction $\frac{m}{r^2}$ assumes, when for m and r are successively substituted the masses and mean distances of *Venus, Earth, Jupiter, and Saturn;* and the angles of the four sines are the values of $\frac{360^\circ}{t}$, when for t are substituted the periodic times of the same planets, the conclusion seems to be inevitable, that my

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